

## REMARKS

Applicant respectfully requests reconsideration of this application in view of the following remarks.

### Status of the Claims

Claims 1-24 are pending. Claims 2 and 24 are currently amended. No claims have been canceled. No new claims have been added.

### Response to Claim Objections

The informalities in claims 2 and 24 have been corrected.

### Response to Rejections under 35 U.S.C. § 103(a)

Section 2143 of the United States Patent and Trademark Office's Manual of Patent Examining Procedure states that

[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

(M.P.E.P. § 2143 (2006).) Therefore, to traverse rejections under 35 U.S.C. § 103, one must show either (1) there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings, or (2) if such suggestion or motivation exists, there is no reasonable expectation of success (for example, if the reference teaches away from the approach or combination), or (3) the prior art references, whether standing alone or together, fail to teach or suggest all claim limitations.

### The Balch Patent

In all rejections, the Examiner relied on United States patent number 5,909,178, by Balch *et al* (“Balch”). Balch addresses how to set a particular threshold in an electronic article surveillance (EAS) system. The invention concerns the sensitivity of systems that detect the markers that are often fastened to items of clothing by stores attempting to deter shoplifting.

For an examiner “to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” M.P.E.P. § 2141.01(a)(I), quoting *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). The invention in Balch is not in the DSL field or even in the field of wireline communications, nor is the problem of improving the sensitivity of an electronic surveillance system reasonably pertinent to the problem of improving the performance of a modem in the presence of asymmetrical Gaussian noise. A person with ordinary skill in the art of DSL could not reasonably be expected to be familiar with electronic article surveillance or with the problem Balch attempts to solve, nor would one skilled in the art of DSL look to the area of electronic article surveillance for guidance on bit loading in the presence of asymmetrical Gaussian noise. Thus, Applicant asserts that the Balch patent represents non-analogous art and should not serve as the basis for a rejection under 35 U.S.C. § 103. Nevertheless, Applicant also shows that Balch, whether alone or in combination with the other references cited by the Examiner, fails to disclose or teach all elements of the rejected claims.

### Claim 1

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Stiscia (US6738418) in view of Balch. Applicant traverses by showing that neither Stiscia nor Balch, whether alone or in combination, teaches all limitations of claim 1.

Claim 1 reads:

An apparatus, comprising:

a multi-tone receiver to detect data in a multiple tone signal, the receiver having a detector module to measure a noise power level present in the system, and the detector module to detect for an asymmetric Gaussian noise source in the background noise, and

a gain module coupled to the multi-tone receiver to determine a total noise power level for a tone in the multi-tone signal based upon an equivalent noise power algorithm, the gain module to use the equivalent noise power algorithm to compensate the measured noise power level when the detector module indicates that the asymmetric Gaussian noise source exists in the background noise.

The Examiner asserts that Stiscia discloses all elements of claim 1 except the asymmetric noise element. However, in addition to failing to teach detection of an asymmetric Gaussian noise source, Stiscia also fails to disclose or teach an equivalent noise power algorithm whereby the total noise power level for a tone in the multi-tone signal is determined.

Stiscia discloses a method to optimize the width of the guard band between the upstream and downstream bands in a DSL system by choosing the best receiver filter from a pre-defined set of receiver filters, each of which spans a different bandwidth and therefore corresponds to a different guard band width. To make the choice, Stiscia calculates the actual noise power on each subchannel using the measured, sampled time-domain background noise signal  $s[n]$ . The Examiner interprets the calculation described in column 6, lines 31-34 as an equivalent noise power algorithm. However, Stiscia calculates the actual noise power on each subchannel using

the measured, sampled time-domain background noise signal  $s[n]$ . Although the Examiner interprets the calculation described in column 6, lines 31-34 as an equivalent noise power algorithm, the calculation cited is simply a transformation from the time domain to the frequency domain, which is used to determine the noise power on each frequency-domain subchannel in a DMT system. In contrast, claim 1 states “the equivalent noise power algorithm to compensation . . . when . . . asymmetric Gaussian noise source exists.” Stiscia fails to disclose an algorithm that compensates. Stiscia discloses a mathematical transform operation. In simpler terms, if I transform the numeric value ‘ $2x$ ’ to ‘ $8x/4$ ,’ then I have transformed the data but no form of compensation has been applied to the original data. Stiscia fails to disclose or teach any of these elements, and thus the calculation cited by the Examiner is not an equivalent noise power algorithm as that term is used in claim 1.

The Examiner then interprets Balch as teaching the detection of asymmetric Gaussian noise levels. The Examiner relies on a plot in Balch that shows the moving average of the detected noise level as a function of time and says “the moving average line in fig. 1 of Balch is interpreted to be an indication of asymmetric noise.” However, Balch fails to disclose or teach the detection of asymmetrical Gaussian noise. Balch does not disclose real and imaginary noise components exist in the frequency domain. In contrast, Balch does not address noise in the frequency domain but rather merely discusses noise as a voltage level in the time domain. Balch is silent about noise in the frequency domain. Therefore, Balch does not consider noise levels in multiple dimensions in the frequency domain and thus does not comprehend detecting asymmetric noise.

Furthermore, the noise discussed in the disclosure of Balch is not Gaussian noise but rather coherent non-Gaussian noise. Balch seeks to exploit the coherence of the non-Gaussian

noise to reduce its effects on EAS system sensitivity. Were the noise Gaussian, Balch would not improve the sensitivity, as the inventors note: “The amount of improvement actually increases as the noise becomes increasingly non-Gaussian” (col. 6, lines 46-47). The Balch patent therefore actually teaches away from using their disclosed technique in environments with Gaussian noise.

In addition, because Balch attempts to mitigate the effects of non-Gaussian noise, the problem attacked by Balch is different from claim 1. Balch attempts to reduce the noise level appearing at the receiver; claim 1 seeks to “determine a total noise power level for a tone in the multi-tone signal based upon an equivalent noise power algorithm, the gain module to use the equivalent noise power algorithm to compensate the measured noise power level when the detector module indicates that the asymmetric Gaussian noise source exists in the background noise.” Thus, Balch fails to teach the element of detection of asymmetrical Gaussian noise.

Thus, even if Balch were analogous art, the combination of Stiscia and Balch fails to teach all elements of claim 1. In particular, the combination does not teach or disclose the detection of asymmetric Gaussian noise or an equivalent noise power algorithm that compensates and then is used to determine a total noise power level. Furthermore, Balch actually teaches away from using its invention in Gaussian noise environments. Therefore, the combination of Stiscia and Balch cannot render obvious claim 1 under 35 U.S.C. § 103(a), and Applicant respectfully requests the withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a).

### Claim 2

Claim 2 reads:

The apparatus of claim 1, wherein the detector module generates a scatter plot of noise error over time and the detector analyses a shape of the distribution of the noise error in the scatter plot.

The analysis of claim 1 showed that neither Stiscia nor Balch, whether alone or in combination, discloses all elements of claim 1. Applicant also shows that the references fail to disclose the additional elements of claim 2.

The Examiner interprets Balch as teaching generating a scatter plot of noise over time (fig. 1 of Balch) and using a detector to analyze the shape of the distribution of the noise error in the scatter plot (the moving average line in fig. 1 of Balch). However, figure 1 of Balch shows noise sample voltages as a function of time. Figure 1 of Balch simply shows noise samples and their moving average over time. Balch makes no reference to a known value of the transmitted data signal or something else to establish an error amount. Furthermore, the moving average line in figure 1 of Balch is not an analysis of the shape of the distribution of the noise error. First, figure 1 of Balch plots noise samples as a function of time, not noise error. In addition, the moving average line does not analyze the shape of the distribution. It merely provides one statistic – the mean – of the collected data.

Therefore, in addition to failing to teach or disclose detection of asymmetric Gaussian noise and an equivalent noise power algorithm, the combination of Stiscia and Balch fails to teach or disclose any of the additional elements of claim 2. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a).

#### Claims 4 and 7

Claim 4 reads:

A method, comprising:

measuring a power level of noise for a first tone in a multiple tone signal; and

determining a Gaussian noise power level in the first tone and if a noise source is generating an asymmetric pattern of noise.

The Examiner interprets Stiscia as teaching a method comprising measuring a power level of noise for a first tone in a multiple tone signal, and Balch as teaching determining a Gaussian noise power level in the first tone and if a noise source is generating an asymmetric pattern of noise. Applicant traverses by showing the combination of Stiscia and Balch fails to teach all elements of claim 4.

The Examiner interprets Stiscia as teaching measuring a power level of noise for a first tone in a multiple tone signal (block 306 in fig. 6a in Stiscia, and col. 6 line 15 in Stiscia). However, as noted previously, Stiscia measures the noise in the time domain, whereas tones exist in the frequency domain. Therefore, because Stiscia fails to measure a power level of noise for a first tone in a multiple tone signal, this element is not taught or disclosed.

The Examiner interprets Balch as teaching determining a Gaussian noise power level in the first tone (col. 5 lines 20-24 and lines 43-44 in Balch). However, the samples in Balch are in the time domain and therefore do not correspond to tones. In addition, Balch never converts the time-domain samples to the frequency domain and thus does not contemplate “tones.” Finally, Balch measures the amplitudes of the noise samples, which are voltages, not power levels.

The Examiner also interprets Balch as teaching determining whether a noise source is generating an asymmetric pattern of noise. In particular, the Examiner interprets the moving average line of figure 1 of Balch to be an indication of asymmetric noise. As noted previously, however, Balch fails to disclose or teach the detection of asymmetrical Gaussian noise as that term is defined in paragraph [0005] of the specification. Balch does not address noise in the frequency domain but rather only as a voltage level in the time domain. Because Balch does not comprehend detecting asymmetric Gaussian noise, it does not teach that element of claim 4.

Thus, the combination of Stiscia and Balch fails to disclose or teach all elements of claim 4. Claim 7 depends from claim 4, and therefore neither Stiscia nor Balch, whether alone or in combination, discloses or teaches all elements of claim 7. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 4 and 7 under 35 U.S.C. § 103(a).

Claim 14 contains literally different limitations but similar limitations to those found in claim. Accordingly, Claim 14 is patentable over Stiscia and Balch under 35 U.S.C. § 103(a) for similar reasons to those argued above.

#### Claim 17

Claim 17 reads: “The article of manufacture of claim 14, wherein the multiple tone carrier signal is a Digital Subscriber Line signal.” The Examiner applies the same logic as in the rejection of claim 7. Thus, a similar argument above for claim 7 applies to claim 17, and Applicant asserts that the combination of Stiscia and Balch fails to teach all elements of claim 17. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a).

#### Claim 24

As amended, claim 24 reads:

An apparatus, comprising:

means for detecting data in a multiple tone signal;

means for measuring a noise power level present in the system;

means for detecting an asymmetric Gaussian noise source in a background noise;

means for determining a total noise power level for a first tone in the multiple tone signal based upon an equivalent noise power algorithm; and

means for using the equivalent noise power algorithm to compensate the measured noise power level if the detector module indicates that the asymmetric Gaussian noise source exists in the background noise.

The Examiner interprets Balch as teaching a means to detect Gaussian noise levels (col. 5 lines 20-24 and lines 43-44) and whether there is an indication of asymmetric noise in the background noise (the moving average line in fig. 1 of Balch is interpreted to be an indication of asymmetric noise). However, as noted in the arguments to traverse the rejection of claim 1, Balch fails to disclose or teach the detection of asymmetrical Gaussian noise. Balch actual states that its invention works better when Gaussian noise is present. Balch does not address noise in the frequency domain but rather only as a voltage level in the time domain. Balch does not consider noise levels in multiple dimensions and thus by definition does not comprehend detecting asymmetric noise.

The Examiner interprets Stiscia as teaching means for determining a total noise power level for a first tone in the multiple tone signal (col. 6 lines 50-53) based upon an equivalent noise power algorithm (col. 6 lines 31-34). The Examiner interprets the estimate of the background noise in Stiscia to be the equivalent noise power algorithm. However, as noted in the arguments to traverse the rejection of claim 1, Stiscia fails to disclose or teach an equivalent noise power algorithm that compensates.

Furthermore, following Stiscia's conversion of the sequence  $s[n]$  to the frequency domain, no equivalent noise power algorithm is used to modify the frequency-domain noise power level values. Instead, the best filter is chosen based on the results of a calculation that uses the actual measured noise power levels and not noise power values determined by the application of an equivalent noise power algorithm that compensates the measured noise level when asymmetric Gaussian noise is detected.

Finally, the Examiner interprets Stiscia as teaching means for using the equivalent noise power algorithm to compensate the measured noise power level (col. 6 lines 31-34) if the detector module indicates that the asymmetric Gaussian noise source exists in the background noise. The Examiner interprets the estimate of the background noise to be the equivalent noise power algorithm. However, as noted in the previous paragraph, Stiscia fails to teach or disclose an equivalent noise power algorithm, and therefore Stiscia also fails to disclose or teach means for using an equivalent noise power algorithm to compensate the measured noise power level. Furthermore, Stiscia fails to teach a detector module that indicates whether asymmetric Gaussian noise exists in the background noise.

The combination of Stiscia and Balch therefore lacks several elements of claim 24, including the equivalent noise power algorithm, the detection of asymmetric Gaussian noise, and the use of the equivalent noise power algorithm to compensate the measured noise power level. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claim 24 under 35 U.S.C. § 103(a).

#### Claim 5

Claim 5 reads:

The method of claim 4, further comprising:

calculating a gain factor associated with the asymmetric noise pattern; and

applying the gain factor to the measured noise power level to calculate an equivalent total noise power.

The Examiner interprets Stiscia as teaching a method that includes calculating a gain factor associated with the asymmetric noise pattern (col. 6 lines 8-10 in Stiscia). The lines cited refer to the gain setting of the analog-to-digital converter of the modem's receiver. This gain is set to its maximum value to maximize the accuracy of the conversion, which, as the patent notes, is possible because the transmitter is off and saturation of the receiver is not expected. Thus, this disclosed gain is related to the gain of the analog-to-digital converter. Therefore, the gain referred to in Stiscia and cited by the Examiner is entirely different from the "gain factor associated with the asymmetric noise pattern." Furthermore, as discussed above, Stiscia does not contemplate asymmetric noise, and therefore it cannot calculate a gain associated with an asymmetric noise pattern. Thus, Stiscia does not teach or disclose calculating a gain factor associated with the asymmetric noise pattern.

The Examiner interprets the Bosco application as teaching applying the gain factor to the measured noise power level to calculate an equivalent total noise power because Bosco teaches multiplying a noise level factor by a gain factor. The Bosco application concerns a noise filter for digital cameras. The Bosco invention addresses two problems with current image processing in digital camera systems. First, it addresses differentiating noise artifacts from detail in the image, which is necessary to ensure high image quality. Second, whereas current image processing in digital cameras treats the different color components (red, green, and blue) the same, the Bosco invention allegedly improves image processing by treating the green component differently from the red and blue components, the asserted logic being that the human eye is more sensitive to green than to red and blue.

The gain factor in Bosco adjusts the strength of the noise filter themselves rather than a gain factor to the measured noise power level to calculate an equivalent total noise power. In the

first step, an algorithm chooses a “mask and filter window.” For each pixel in Bosco, which is surrounded by eight other pixels, the absolute value of the difference between the center pixel and its eight neighbors is calculated. The maximum value of the absolute value of the difference for the  $i$ th pixel is denoted  $D_{\max}(i)$ , and the minimum value of the difference is denoted as  $D_{\min}(i)$ . The algorithm then estimates the noise level associated with the processing window based on  $D_{\max}$  and  $D_{\min}$ . The noise level, denoted  $NL$ , is calculated recursively. In the recursion, a gain factor  $K_n$ , which determines the strength of filtering to be performed by an adaptive noise filter, is applied.

To determine the value of  $K_n$ , settings chosen by the auto exposure control (AEC) of the digital camera can be incorporated in the analysis. If the image scene is correctly exposed, no correction is needed to compensate for the image scene’s exposure. But if the image cannot be correctly exposed, the AEC of the camera computes a gain factor that is applied to the image. The image becomes brighter as this gain factor increases. However, increasing the gain factor also increases noise in the image. Thus, when this gain factor is high, the noise filter must be stronger.

To mitigate noise enhancement when the AEC applies a gain factor, denoted as  $G$ , the algorithm first computes the ratio of  $G$  to its maximum value, denoted as  $G_{\max}$ . The ratio of  $G/G_{\max}$  is then multiplied by the noise level factor  $NL$  “to determine the highest  $D_{\max}$  value that will have the  $K_n$  parameter equal to 1.” Thus, when the image is exposed correctly with a  $G$  less than  $G_{\max}$ , the noise level factor  $NL$  is reduced, which means the strength of the noise filter is also reduced. When  $G = G_{\max}$ , the filter strength is at its peak.

Although the Examiner interprets the Bosco application as teaching applying the gain factor to the measured noise power level to calculate an equivalent total noise power because

Bosco teaches multiplying a noise level factor by a gain factor, the gain factor in Bosco is not applied to the measured noise power level to calculate an equivalent total noise power. Instead, the gain factor in Bosco adjusts the strength of the noise filter.

The Examiner cites as the motivation to combine Bosco, Balch, and Stiscia the determination of the highest  $D_{max}$  value that will have a  $K_n$  parameter equal to one (Bosco ¶0055). The condition of  $K_n = 1$  in Bosco merely means that the filter strength is maximized, because  $D_{max}$  is left unmodified. Bosco does not address applying a gain factor to a measured noise power level to calculate an equivalent total noise power.

Therefore, in addition to failing to teach or disclose all elements of claim 4, from which claim 5 depends, the combination of Stiscia, Balch, and Bosco also fails to teach the calculation of a gain factor associated with the asymmetric noise pattern or applying the gain factor to the measured noise power level to calculate an equivalent total noise power. Accordingly, Applicant respectfully requests the withdrawal of the rejection to claim 5 under 35 U.S.C. § 103(a).

#### Claim 6

Claim 6 reads:

The method of claim 5, further comprising:

determining a signal-to-noise ratio based on a signal power of the first tone and the calculated equivalent total noise power.

The Examiner interprets Stiscia as teaching determining a signal-to-noise ratio based on a signal power of the first tone and the calculated equivalent total noise power. The Examiner refers to column 6, lines 37-41 of Stiscia and states that the estimate of the noise energy in the frequency bins is interpreted to be the equivalent noise power. However, the calculation referred to is simply the Fourier transform of the autocorrelation of the time-domain sequence  $s[n]$ , which

is a well-known means to determine the power spectrum of a sequence. The result of such a calculation is not the calculated equivalent total noise power. Again, Stiscia does not disclose or teach an equivalent noise power algorithm, and therefore Stiscia, whether alone or in combination with the other cited prior art references, fails to disclose or teach all elements of claim 6. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claim 6 under 35 U.S.C. § 103(a).

#### Claim 8

Claim 8 reads:

The method of claim 4, further comprising:

applying a gain factor to an average of the measured noise power level to calculate an equivalent total noise power of an effective symmetric Gaussian noise present in the system, if the noise source is generating the asymmetric pattern of noise.

The Examiner interprets the combination of Stiscia and Bosco as teaching applying a gain factor (§0055 of Bosco) to an average of the measured noise power level (col. 6 lines 24-25 in Stiscia) to calculate an equivalent total noise power of an effective asymmetric Gaussian noise present in the system, if the noise source is generating the asymmetric pattern of noise. As noted before, the gain factor in Bosco is not applied to the measured noise power level to calculate an equivalent total noise power. Instead, the gain factor in Bosco adjusts the power of a digital camera's noise filters themselves. In contrast, here "[w]hen the calculated gain factor  $G_a$  is compared to the expected gain of [equation] (1), then asymmetric noise is present in the background noise of the channel." (§0051.) Therefore, the gain factor is used during the process of estimating the noise, not in an attempt to mitigate the noise.

Furthermore, the Examiner interprets the moving average line in figure 1 of Balch to be an indication of asymmetric noise. However, Balch fails to disclose or teach the detection of asymmetrical Gaussian noise. As one skilled in the art of DSL knows, real and imaginary components of the noise exist in the frequency domain. Balch does not address noise in the frequency domain but rather merely as a voltage level in the time domain. Therefore, Balch does not consider noise levels in multiple dimensions and thus by definition does not comprehend detecting asymmetric noise as defined in claim 8.

Accordingly, because neither Stiscia nor Balch nor Bosco, whether alone or in combination, discloses or teaches all limitations of claim 8, Applicant respectfully requests the withdrawal of the rejection of claim 8 under 35 U.S.C. § 103(a).

#### Claim 15

The Examiner's rejection of claim 15 repeats the arguments made in the rejection of claim 5, and therefore the arguments made to traverse the rejection of claim 5 also apply to traverse the rejection of claim 15. Accordingly, because neither Stiscia nor Balch nor Bosco, whether alone or in combination, discloses or teaches all limitations of claim 15, Applicant respectfully requests the withdrawal of the rejection of claim 15 under 35 U.S.C. § 103(a).

#### Claim 16

The Examiner's rejection of claim 16 repeats the arguments made in the rejection of claim 6, and therefore the arguments made to traverse the rejection of claim 6 also apply to traverse the rejection of claim 16. Accordingly, because neither Stiscia nor Balch nor Bosco, whether alone or in combination, discloses or teaches all limitations of claim 16, Applicant respectfully requests the withdrawal of the rejection of claim 16 under 35 U.S.C. § 103(a).

### Claim 23

The Examiner's rejection of claim 23 repeats the arguments made in the rejection of claim 8, and therefore the arguments made to traverse the rejection of claim 8 also apply to traverse the rejection of claim 23. Accordingly, because neither Stiscia nor Balch nor Bosco, whether alone or in combination, discloses or teaches all limitations of claim 23, Applicant respectfully requests the withdrawal of the rejection of claim 23 under 35 U.S.C. § 103(a).

### Claim 12

Claim 12 reads:

The method of claim 5, further comprising:

determining bit-loading based on the signal-to-noise ratio based on the equivalent total noise power.

The Examiner relies on Bolinth, which teaches a bit-loading device (device 9 in fig. 1) that controls bit loading depending on a signal-to-noise ratio (¶0029). Bolinth does not make up for the shortcomings of Stiscia and Balch. Thus, whether alone or in combination with Stiscia, Balch, and Bosco, Bolinth does not teach the elements of claim 12, or of claim 5, or of claim 4, from which claim 5 depends.

Bolinth does not contemplate asymmetric Gaussian noise, and thus it does not teach determining a Gaussian noise power level if a noise source is generating an asymmetric pattern of noise. Bolinth does not teach calculating a gain factor associated with the asymmetric noise pattern. Bolinth does not teach applying the gain factor to the measured noise power level to calculate an equivalent total noise power.

As noted in the arguments to traverse the rejections of claims 4 and 5, neither Stiscia nor Balch nor Bosco, whether alone or in combination, teaches these elements. Thus, because

Bolinh also fails to teach any of the elements, the combination of Stiscia, Balch, Bosco, and Bolinh also fails to teach all elements of claim 12. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claim 12 under 35 U.S.C. § 103(a).

Claim 21

The Examiner's rejection of claim 21 repeats the arguments made in the rejection of claim 12, and therefore the arguments made to traverse the rejection of claim 12 also apply similarly to traverse the rejection of claim 21. Accordingly, because neither Stiscia nor Balch nor Bosco nor Bolinh, whether alone or in combination, discloses or teaches all limitations of claim 21, Applicant respectfully requests the withdrawal of the rejection of claim 21 under 35 U.S.C. § 103(a).

### CONCLUSION

It is respectfully submitted that in view of the amendments and remarks set forth herein, the rejections and objections have been overcome. Applicant reserves all rights with respect to the application of the doctrine of equivalents. If there are any additional charges, please charge them to our Deposit Account No. 02-2666. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 08/09/2007\_\_\_\_\_

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